

IC-DRIVEN SYNCHRONOUS RECTIFICATION
ISOLATED FORWARD CONVERTER

FIG. 1B

SELF-DRIVEN SYNCHRONOUS RECTIFICATION
ISOLATED FORWARD CONVERTER

FIG. 1A

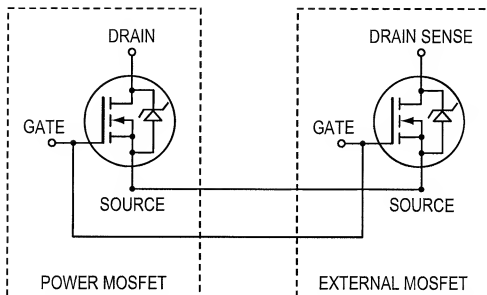
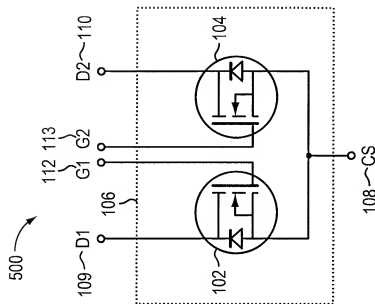


FIG. 2



FIRST EMBODIMENT:
3-LEAD SELF-DRIVEN
SYNCHRONOUS RECTIFICATION
MOSFET PAIR

FIG. 3A



SECOND EMBODIMENT:
5-LEAD CONTROL IC-DRIVEN
SYNCHRONOUS RECTIFICATION
MOSFET PAIR

FIG. 3B

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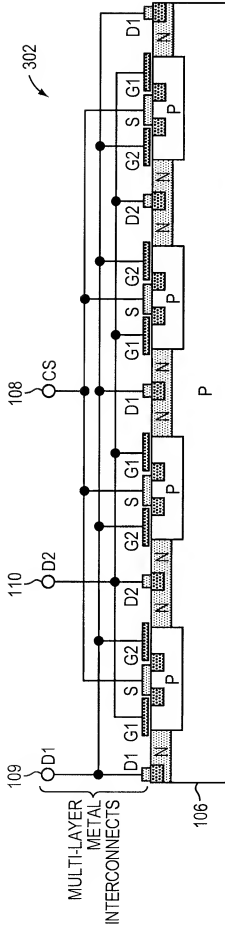


FIG. 4A

FIRST EMBODIMENT: 3-LEAD SELF-DRIVEN MOSFET PAIR IN INTERLEAVED CELL FINGERS

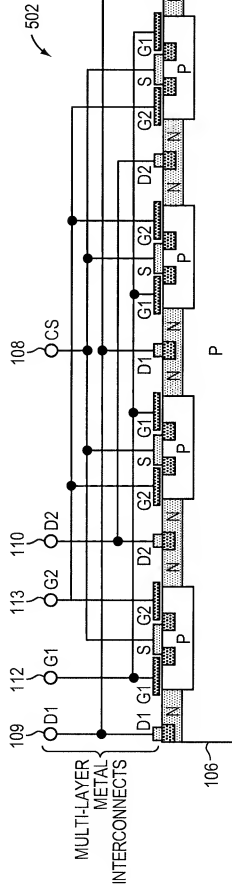


FIG. 4B

SECOND EMBODIMENT: 5-LEAD EXTERNAL-DRIVEN MOSFET PAIR IN INTERLEAVED CELL FINGERS

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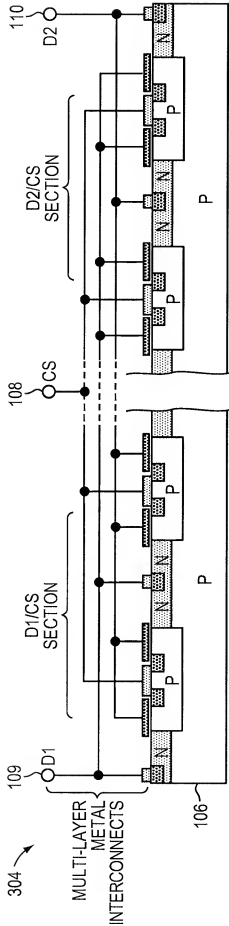


FIG. 5A

THIRD EMBODIMENT: 3-LEAD SELF-DRIVEN MOSFET PAIR IN SEPARATE CELL SECTIONS

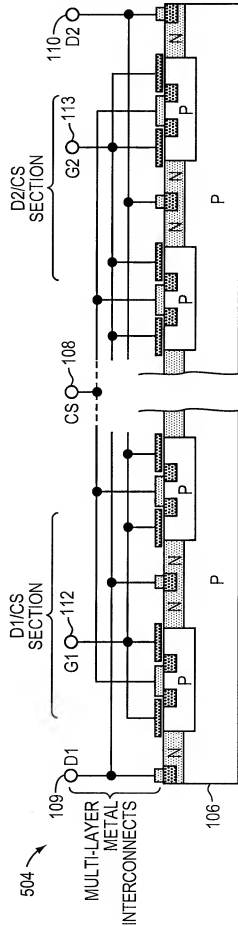


FIG. 5B

FOURTH EMBODIMENT: 5-LEAD EXTERNAL-DRIVEN MOSFET PAIR IN SEPARATE CELL SECTIONS

1. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED
OF MULTIPLE TRANSISTORS WITH COMMON SOURCE CONNECTION
WITH ONE OR MORE TRANSISTORS HAVING
ELECTRICALLY ISOLATED DRAIN AND GATE CONNECTIONS

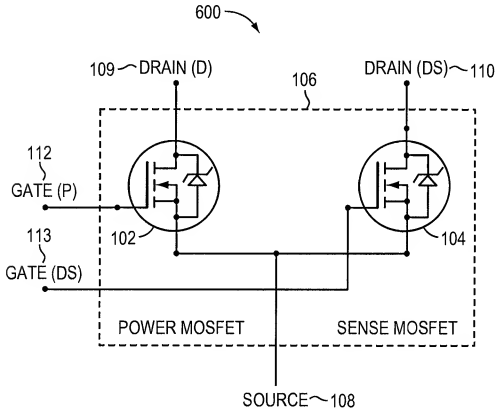


FIG. 6

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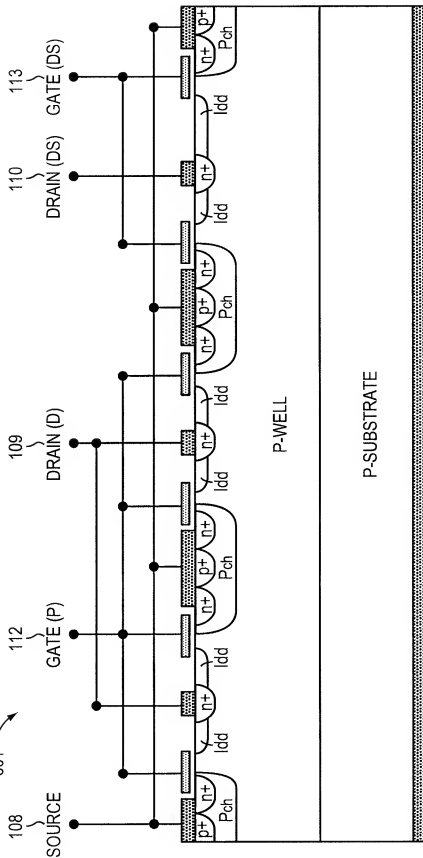


FIG. 7
CROSS-SECTIONAL DIAGRAM OF A POWER MOSFET WITH INTEGRATED DRAIN SENSE

2. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED
OF MULTIPLE TRANSISTORS WITH COMMON SOURCE AND
GATE CONNECTIONS WITH ONE OR MORE TRANSISTORS HAVING
ELECTRICALLY ISOLATED DRAIN CONNECTIONS

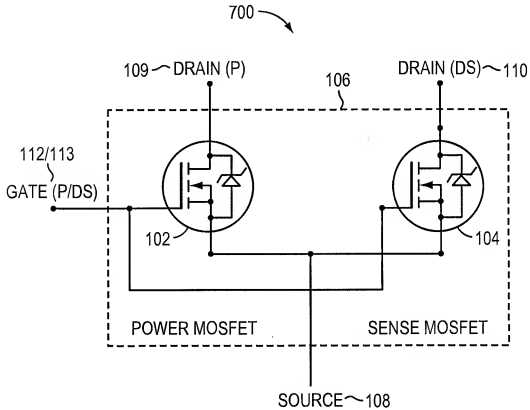
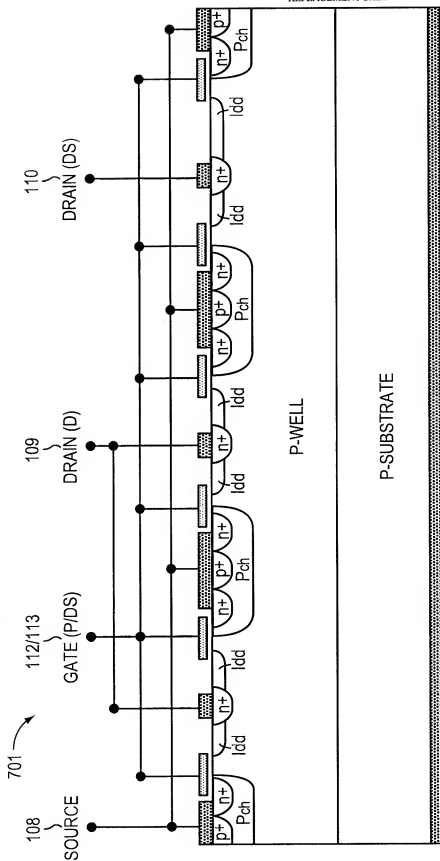


FIG. 8

2. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED OF MULTIPLE TRANSISTORS
WITH COMMON SOURCE AND GATE CONNECTIONS WITH ONE OR MORE TRANSISTORS
HAVING ELECTRICALLY ISOLATED DRAIN CONNECTIONS



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Title: "Monolithic Power Semiconductor
Structures Including Pairs of Integrated Devices"
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REPLACEMENT SHEET 9 of 11

FIG. 9
CROSS-SECTIONAL DIAGRAM OF A POWER MOSFET WITH INTEGRATED DRAIN SENSE

3. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED
OF MULTIPLE TRANSISTORS WITH COMMON SOURCE AND
GATE CONNECTIONS WITH ONE OR MORE TRANSISTORS HAVING
SUBSTANTIALLY DIFFERENT THRESHOLD VOLTAGES
AND ELECTRICALLY ISOLATED DRAIN CONNECTIONS

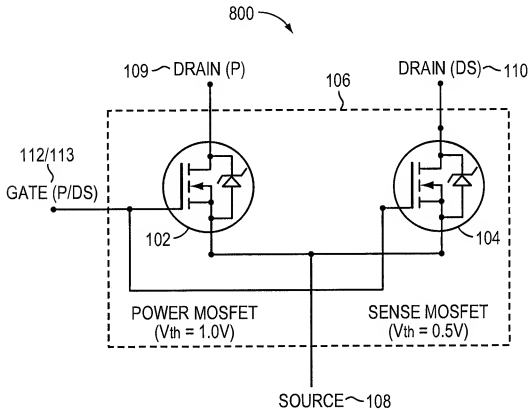


FIG. 10

801 → INDICATES THRESHOLD ADJUST IMPLANT

108 SOURCE

109 DRAIN (P)

110 DRAIN (DS)

112/113 GATE (PIDS)

Pch

P-WELL

P-SUBSTRATE

FIG. 11

CROSS-SECTIONAL DIAGRAM OF A POWER MOSFET WITH INTEGRATED DRAIN SENSE